REMARKS

Claims 1-16 remain pending in the application. Claims 6-10 were allowed in the Final Action. Reconsideration of the remaining claims is respectfully requested in light of the following remarks.

Section 102(e) Rejection:

The Final Action rejected claim 11 under 35 U.S.C. § 102(e) as being anticipated by Chiu et al. (U.S. Patent 6,327,259) (hereinafter, "Chiu"). Applicants traverse this rejection and assert that pending claim 11 is not anticipated by Chiu for at least the following reasons.

Chiu fails to teach or suggest all of the limitations of Applicants' claim 11. **Specifically, Chiu neither teaches nor suggests providing a plurality of functional units each configured to perform a specific function of a serial communication protocol upon portions of multiple serial data channels.** Instead, Chiu discloses providing individual HDLC controllers, each of which is configured to perform protocol processing associated with a single communications channel. In FIG. 3, Chiu illustrates HDLC A 200, HDLC B 202, and HDLC C 204 each configured to process a single channel (D, B2 and B1, respectively). Respectively, TSAA 208, TSAB 210 and TSAC 212 control the clock enables to each HDLC such that a given HDLC transmits or receives on its channel only when its clock is enabled (Chiu, col. 5, lines 32-57 and col. 9, lines 48-57). Otherwise the HDLC is idle (Chiu, col. 9, lines 10-13). Chiu neither teaches nor suggests that at any time a given HDLC (nor, by extension, any functional unit within a given HDLC) processes any channel other than the one it was previously assigned (such as by execution unit 124).

In the "Response to Arguments" section of the Final Action, the Examiner refers to the plurality of units 512-518 illustrated in FIG. 7 of Chiu, asserting that these units perform various HDLC protocol processing functions on portions of multiple serial

(HDLC) data channels. The Examiner's interpretation of Chiu is incorrect. The elements illustrated in Chiu's FIG. 7 comprise transmitter 506, a single instance of which resides within a given HDLC controller, HDLC A 200 as illustrated in FIG. 6. However, as noted above, Chiu teaches that at any given time, an HDLC controller corresponds to a single communication channel. That is, HDLC A 200 corresponds to an ISDN D channel, HDLC B 202 corresponds to an ISDN B2 channel, HDLC C 204 corresponds to an ISDN B1 channel, and HDLC 206 corresponds to a PCM highway. Because the elements of FIG. 7 to which the Examiner refers reside within a single given HDLC controller, and a given controller corresponds to a single channel, it is impossible that the units 512-518 within a single HDLC of Chiu process portions of multiple serial data channels, as required by claim 11. Rather, Chiu provides separate and distinct units that process only their respective communication channels. Nowhere does Chiu suggest that the processing performed by the units 512-518 HDLC A 200 on the D channel data has anything to do with the processing performed by similar units of HDLC B 202 on the B2 channel data. Channel processing in Chiu is segregated within separate units associated with separate channels.

Chiu's description of the operation of HDLC controllers 200-206 further illustrates this distinction. As noted above, the transmission and receive operation of a given HDLC controller of Chiu is controlled by corresponding transmit and receive clock enable signals. According to Chiu, a given HDLC controller is only enabled during a time slot when its corresponding channel is active (col. 7, line 61 – col. 8, line 3). Correspondingly, if a channel is not active, its corresponding HDLC controller is not performing communication protocol functions on a different channel. Rather, the controller and its functional units are idle and waiting for the corresponding channel to become active again. Thus, Chiu clearly fails to teach or suggest that functional units perform specific functions of a serial communications protocol on portions of multiple serial data channels as recited in claim 11.

Applicants remind the Examiner that anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention,

arranged as in the claim. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The identical invention must be shown in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). It is clear that Chiu fails to meet this standard with respect to claim 11.

Further, Chiu neither teaches nor suggests that each functional unit is a state machine having a set of unique operating states. The Final Action relies on flag/abort generator 512, CRC checker 514, zero insert 516, and shift register 518 of Chiu to teach this limitation, considering these to teach "a plurality of functional units". However, Chiu neither teaches nor suggests that these specific units are state machines. The reference cited by the Examiner (col. 10, lines 14-16) refers only to resetting "internal state machines and shift registers of the HDLCA channel 200," which in no way teaches or suggests specific characteristics of the units 512-518.

In the "Response to Arguments" section of the Final Action, the Examiner reasserts the reference to Chiu, col. 10, lines 14-16. However, a mere reference to the existence of state machines within the HDLC controller of Chiu that may be resettable is in no way a teaching or suggestion that **each functional unit within that controller is a state machine having a set of unique operating states**. As noted previously, in order to anticipate this aspect of claim 11, Chiu must show the identical structure in as complete detail as recited in claim 11. The Examiner's generalization regarding the function of state machines that are not shown and not described by Chiu in any detail (other than being resettable) is clearly improper.

Moreover, Chiu neither teaches nor suggests that state information stored within a given functional unit determines the one of the unique operating states in which the functional unit is operating. As argued above, Chiu fails to teach or suggest that each functional unit is a state machine, and so cannot teach or suggest aspects of state information stored within a given functional unit.

In the "Response to Arguments" section of the Final Action, the Examiner refers to Chiu, col. 10, lines 16-25, in which Chiu continues discussion of the behavior of HDLC A controller 200 following reset. Specifically, this section of Chiu refers to enabling the receiver 502 and transmitter 506 (which in turn include the units 512-518 relied upon by the Examiner to teach the functional units of claim 11) via the receive and transmit clock enables, respectively. However, this does not constitute a teaching or suggestion regarding the state information stored within a given functional unit determines the one of the unique operating states in which the functional unit is operating. Rather, it is an overall statement regarding the behavior of HDLC A controller 200. This portion of Chiu is merely a high-level, qualitative description of the controller operation that does not in any way teach the detailed recitation in Applicants' claim.

Furthermore, Chiu fails to teach or suggest transferring state information between the plurality of functional units and a memory unit such that the plurality of functional units operates alternately upon the portions of the multiple serial data channels. As argued above, Chiu in no way teaches or suggests that a given HDLC operates on other than a single data channel, and so Chiu cannot teach or suggest that functional units within a given HDLC operate alternately upon portions of multiple serial data channels. Further, Chiu does not teach or suggest transfer of state information between functional units and a memory unit. The Final Action relies on registers 500 to teach this limitation. However, aside from mentioning that registers 500 include a reset bit that may be set by software, Chiu is entirely silent as to the specific function of registers 500 within HDLC 200.

In the "Response to Arguments" section of the Final Action, the Examiner asserts that Chiu discloses that state information is transferred between the functional units 512-518 of FIG. 7 such that the functional units operate alternately on the portions of the multiple serial data channels. Specifically, the Examiner asserts that the functional units of Chiu operate alternately on different time slots of multiple serial data channels. As argued above, however, a given set of functional units of Chiu only ever operates on a single data channel. The functional units of a given HDLC controller of Chiu operate on

a given channel during a time slot in which that channel is active and are otherwise idle. Further, a plurality of functional units alternating between operating and not operating on a single channel, as in Chiu, is simply not equivalent to a plurality of functional units operating alternately upon portions of multiple serial data channels, as recited in claim 11. There is clearly no teaching in Chiu of transferring state information between the plurality of functional units and a memory unit such that the plurality of functional units operates alternately upon the portions of the multiple serial data channels.

Finally, Chiu fails to teach or suggest that different state information is transferred for each serial data channel depending on which serial data channel's portion is being operating on by the plurality of functional units. As argued above, Chiu fails to teach or suggest the transfer of state information, that the functional units are state machines, or that the functional units operate on multiple serial data channels, and so cannot teach this limitation. **Applicants note that the Examiner did not rebut this argument in the "Response to Arguments" section of the Final Action.**

As Chiu fails to teach or suggest all of the limitations of Applicants' claim 11, Chiu cannot be said to anticipate claim 11. Applicants submit that claim 11 is patentably distinguishable from Chiu.

Section 103(a) Rejection:

The Final Action rejected claims 1-2 under 35 U.S.C. § 103(a) as being unpatentable over Rowett et al. (U.S. Patent 5,991,817) (hereinafter, "Rowett") in view of Chiu. Claims 14-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kurnick et al. (U.S. Patent 5,721,726) (hereinafter "Kurnick") in view of Chiu. Applicants traverse these rejections and assert that claims 1-2 and 14-16 are patentably distinguishable over the cited references for at least the following reasons.

Neither Rowett nor Chiu individually or collectively teach or suggest all of the limitations of Applicants' claim 1. The Examiner notes that Rowett does not disclose the

details of Applicants' claim 1 pertaining to: a plurality of functional units configured to operate in series according to a serial communication protocol, wherein each functional unit is configured to perform a different specific function of the serial communication protocol, and wherein the plurality of functional units operates in time sequence upon the portions of the multiple serial data channels, and wherein the plurality of functional units is configured to perform the serial communication protocol on the multiple serial data channels. The Examiner relies on Chiu to teach these limitations. However, as argued above with respect to claim 11, Chiu neither teaches nor suggests a plurality of functional units configured to perform a serial communication protocol on multiple serial data channels. As noted above, in no event does an HDLC of Chiu operate on other than a single data channel, for which it is either transmitting/receiving or idle at any given time.

Since the cited references fail to teach or suggest all of the limitations of Applicants' claim 1, Applicants submit that claim 1 is patentably distinguishable, as is claim 2 depending from claim 1.

In regard to claim 14, neither Kurnick nor Chiu individually or collectively teach or suggest all of the limitations of Applicants' claim 14. **Specifically, Kurnick and Chiu do not teach or suggest a timing recovery unit configured to produce a clock signal derived from a receive serial data stream and to provide the receive serial data stream.** *Applicants note that the Examiner fails to provide any evidence from the cited art addressing this feature of claim 14.*

Further, the Examiner notes that Kurnick fails to disclose the details of Applicants' claim 14 pertaining to a serial communication controller comprising a plurality of functional units configured to operate in series according to a serial communication protocol, wherein each functional unit is configured to perform a different specific function of the serial communication protocol, and wherein the functional units operate alternately on the portions of the multiple serial data channels of a receive serial data stream to perform the protocol on the multiple serial data channels.

The Examiner relies on Chiu to teach these limitations. However, for the reasons given above with respect to claim 11, Chiu fails to teach or suggest these limitations.

Since the cited references fail to teach or suggest all of the limitations of Applicants' claim 14, Applicants submit that claim 14 is patentably distinguishable, as are claims 15-16 depending from claim 14. Applicants note that the Examiner did not rebut any of Applicants' arguments in regard to claim 14 in the "Response to Arguments" section of the Final Action.

Allowable Subject Matter:

Claims 6-10 were allowed. Claims 3-5 and 12-13 were objected to as being dependent upon a rejected base claim but otherwise allowable if rewritten in independent form. For at least the reasons given above, Applicants submit that claims 3-5 and 12-13 are allowable as depending from patentably distinct base claims. Applicants therefore respectfully request allowance of claims 3-5 and 12-13 in their current form.

CONCLUSION

Applicants submit the application is in condition for allowance, and notice to that effect is respectfully requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above referenced application from becoming abandoned, Applicants hereby petition for such extension. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5000-74400/RCK.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

☐ Petition for Extension of Time

☐ Notice of Change of Address

☐ Fee Authorization Form authorizing a deposit account debit in the amount of $ for fees ( ).

☐ Other:

Respectfully submitted,

Robert C. Kowert
Reg. No. 39,255
ATTORNEY FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C.
P.O. Box 398
Austin, TX 78767-0398
Phone: (512) 853-8850

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